

X-ray Imaging of the RTI Bump Bonded Units (Batch of 06/21/05)

A batch of 8 bump bonded units was delivered on 6/21/05 from the RTI Company. The units have been X-rayed in Fermilab Feynman Center by Bill Barker. The scheme of scanning is shown in Fig.1. Only corners of the units were scanned, as this is presumably the most difficult area to bond.

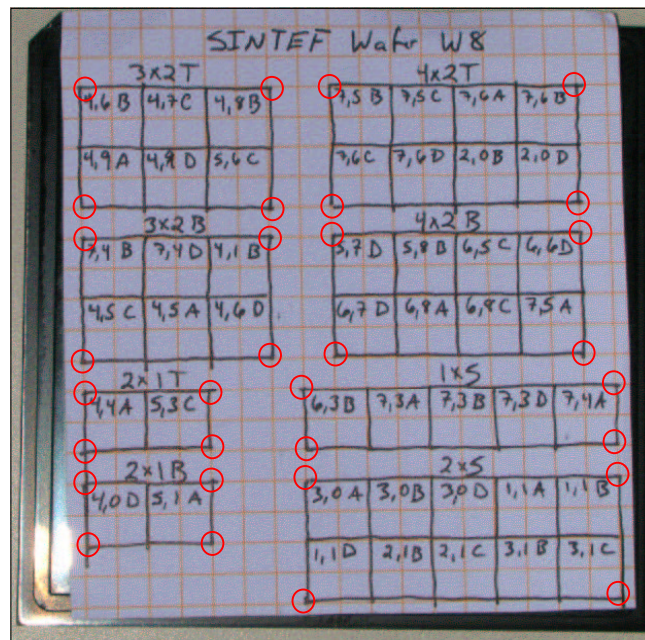


Fig. 1. Scheme of scanning: red circles show corner areas scanned

The following observations are made:

2x3#1 - no problem

2x4#2: - 3 bumps are missing, some smaller than others at the 75b corner chip
(Fig.2)

several bumps are fuzzy at 20D corner chip

2x3#3 - no problem

2x4#4 - weak and fussy bumps at 57D corner chip

some fuzzy bumps at 66D corner chip

one bump missing and few weak bumps at 75A corner chip(Fig.3)

1x5#5 - fuzzy bumps at 63B upper corner of the chip

- weak bumps at 63B lower corner of the chip

1x2#6 - weak bumps at 53C and 44A lower corners of the chips

1x2#7 - no problem

2x5#8 - one dot is weak at 11b corner chip

Summarizing, observed defects are significantly more serious than ones observed on VTT and IZM batches of bump bonded units.

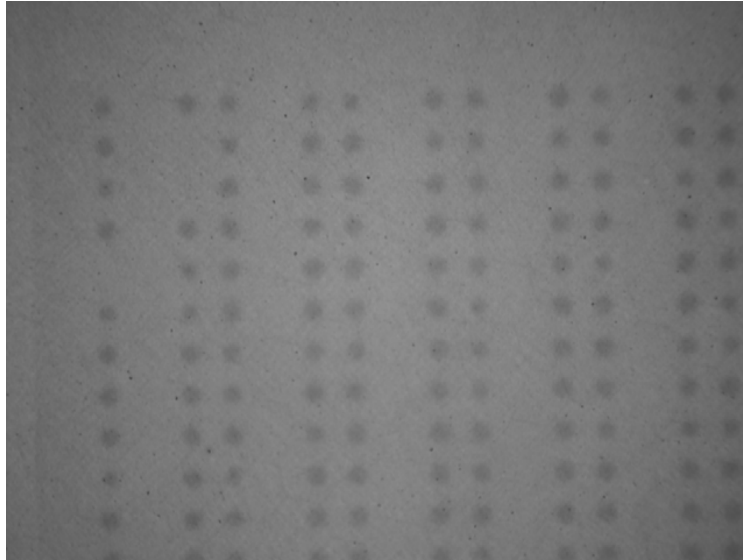


Fig. 2 Three missing bumps at 2x4#2 unit at corner chip 75B
Some weak bumps are evident.

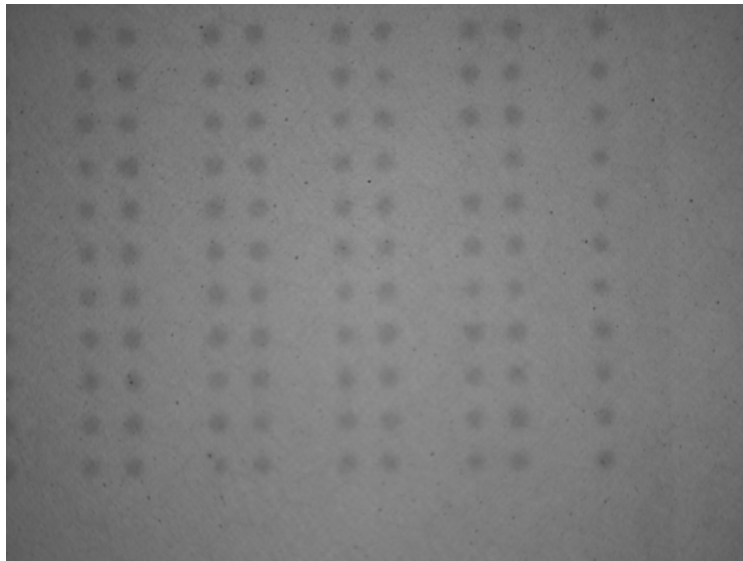


Fig. 2 One missing bump at 2x4#2 unit at corner chip 75A
Some weak bumps are evident.